

**REMARKS/ARGUMENTS**

Claims 1, 6, 9-11 and 13-34 are pending in the application. Claims 1, 6, 9-11, 13-26 and 28-34 stand rejected, with claim 27 objected to in the outstanding Official Action. Claims 1, 11 and 27 have been amended and therefore claims 1, 6, 9-11 and 13-34 remain in the application.

The Examiner's abandonment of the previous action's rejection of independent claims 1 and 13 over the Dyer reference under 35 USC §102 is very much appreciated. However, the Examiner now rejects the independent claims and many claims dependent thereon under 35 USC §103 as unpatentable over Dyer (U.S. Patent 4,585,986) in view of Wilcox (U.S. Patent 5,847,554).

The Examiner's admission that Dyer "does not disclose expressly a voltage sensor for producing a signal indicative of said DC supply voltage" is very much appreciated. Because this "voltage sensor" is a structure positively recited in Applicant's claim, it is incumbent upon the Examiner to demonstrate how or where this structure is disclosed at least in one of the two cited references.

Specifically, the Examiner is reminded that the Court of Appeals for the Federal Circuit has held that "the PTO has the burden under Section 103 to establish a *prima facie* case of obviousness." *In re Fine*, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). "It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." None of the references teach any voltage sensor for producing a signal "indicative of said DC supply voltage" and therefore, the Examiner has not met his burden of setting out a *prima facie* case of obviousness.

In the current outstanding Official Action, the Examiner alleges that Wilcox discloses voltage sensing circuit 320 and that this is analogous structure to Applicant's claimed "voltage sensor for producing a signal indicative of said DC supply voltage." The Examiner is believed incorrect with respect to the alleged teaching in the Wilcox reference. One of ordinary skill in the art need only review the cited portion of the Wilcox reference, i.e., column 5, lines 1-42, to appreciate that "sensing circuitry 320" teaches the sensing of the **output voltage** of the output circuitry 340 and not any "DC supply voltage." The Examiner's attention is directed specifically to column 5, lines 33-37, which states "regulator 300 employs  $V_{DS}$  sensing circuitry 320 to derive an analog waveform **indicative of inductor current** from the combined drain-to-source voltage drop measurements of the two MOSFET switching elements, taken as each in turn conducts" (emphasis added).

Again, it is noted that Applicant's claim requires a voltage sensor for producing a signal indicative of "said DC supply voltage." The only DC supply voltage in Wilcox is discussed at column 5, lines 11-16 and is shown in both Figure 2 Prior Art and Figure 3 as  $V_{IN}$  and is discussed at column 5 as being "an unregulated DC supply voltage  $V_{IN}$ ." There is no suggestion or disclosure that the  $V_{IN}$  voltage sensor in Wilcox provides any measurement of the DC supply voltage. It seems abundantly clear that the operation of Wilcox is to provide a regulated output voltage, and it is this **output voltage** which is being measured by the Wilcox  $V_{DS}$  sensing circuitry 320.

In the Official Action on page 3, the Examiner suggests that the Wilcox sensing circuit 320 is "an indication of the current supplied by the regulator and the DC input  $V_{in}$ , see abstract" but does not even allege that this is a "signal indicative of said DC supply voltage" as required

by independent claims 1 and 13. Should the Examiner contend that Wilcox does disclose a structure which provides “a signal indicative of said DC supply voltage,” he is respectfully requested to identify such structure. Absent a disclosure of such structure in Wilcox, it is clear that even if Wilcox and Dyer are combined, they do not teach the structures recited in claim 1 and the method steps recited in claim 13 or claims dependent thereon.

In its recent decision, the U.S. Supreme Court in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (April 2007), held that it is often necessary for a court to look to interrelated teachings of multiple patents, the effects of demands known to the design community or present in the marketplace and the background knowledge possessed by a person of ordinary skill in the art in order to determine whether there was an apparent reason to combine the known elements in the fashion claimed by the patent at issue. The Supreme Court held that “[t]o facilitate review, this analysis should be made explicit.” *Id.* at 1396.

The Supreme Court in its *KSR* decision went on to say that it followed the Court of Appeals for the Federal Circuit’s advice that “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” (the Supreme Court quoting from the Court of Appeals for the Federal Circuit in *In re Kahn*, 78 USPQ2d 1329 (Fed. Cir. 2006)).

The Examiner fails to provide any explicit analysis of a rationale for combining references. He makes only a conclusory statement in the last paragraph on page 3 of the Official Action that it would be obvious to combine the teachings of Dyer with the purported voltage

sensor of Wilcox. As noted above, the only voltage sensor disclosed in Wilcox does not sense the DC supply voltage and instead is related to the Wilcox output.

The Examiner also alleges that he has a “reason” or “motivation” for combining the two references in the first paragraph on page 4. However, this purported “reason” has nothing to do with any motivation for picking and choosing elements from the two cited references and then combining them in the manner of independent claims 1 and 13. As the Supreme Court noted in the above quote, this statement is a mere conclusory statement and the alleged benefits for the combination (“avoid dissipative losses in current sensing elements and costly manufacturing process”) do not provide any motivation for combining a voltage sensor providing a signal indicative of a DC supply voltage with the other structural elements recited in Applicant’s original claims 1 and 13. How either of the alleged motivations, i.e., “avoid dissipative losses” or “costly manufacturing process” provides any motivation for combining the claimed DC supply voltage sensor with the other elements of claim 1 is not seen and clarification is respectfully requested.

Absent a clarification which provides an explicit analysis of the Examiner’s basis or rationale for combining elements of Dyer and Wilcox, the Examiner has simply failed to establish a *prima facie* case of obviousness under §103 and any further rejection of claims 1 and 13 or claims dependent thereon is respectfully traversed.

As noted in Applicant’s Pre-Appeal Brief Request for Review, the Examiner also fails to appreciate that the Dyer reference actually teaches away from the claimed invention. The primary reference Dyer teaches that the co-axial shunt 27 is for developing “a voltage signal proportional to the load current.” Because the load current feeding an inductor does not reflect

the DC supply voltage, the Dyer reference clearly teaches away from any supply voltage sensing.

The Court of Appeals for the Federal Circuit has also opined that it is “error to find obviousness where references ‘diverge from and teach away from the invention at hand’.” *In re Fine* at 1599. Because none of the references teach the use of a DC supply voltage sensor and because Dyer teaches away from such a supply voltage sensor and suggests instead a load current sensor, the prior art teaches away from the invention at hand. This is strong evidence of non-obviousness of the claims, clearly rebutting any *prima facie* case of obviousness set out in pages 3 and 4 of the Official Action.

It is noted that the Examiner repeats his admission with respect to Dyer, his incorrect allegation as to Wilcox teaching an input voltage sensing circuit and his conclusory statement as to obviousness on page 5 of the Official Action and this is again respectfully traversed for the reasons noted above.

In section 4 of the Official Action, the Examiner rejects claim 16 as unpatentable over the Dyer/Wilcox combination further in view of Durif (U.S. Patent 6,504,698). As noted above, the Dyer and Wilcox references do not disclose all features of Applicant’s independent claim 13 from which claim 16 ultimately depends and therefore the combination fails to disclose the subject matter of claim 16. The Examiner does not allege that the Durif reference contains any teaching of Applicant’s claimed sensor for producing “a signal indicative of said DC supply voltage.” As a result, even if Dyer, Wilcox and Durif were combined as suggested by the Examiner, there would be no disclosure of claim 13, let alone claim 16 dependent thereon. Accordingly, any further rejection of claim 16 is respectfully traversed.

In section 5 of the Official Action, the Examiner rejects claims 26, 33 and 34 as unpatentable over the Dyer/Wilcox combination further in view of Ramarathnam (U.S. Patent 6,316,895). As noted above, the Dyer and Wilcox references do not disclose all features of Applicant's independent claim 13 from which claims 26, 33 and 34 ultimately depend and therefore the combination fails to disclose the subject matter of claims 26, 33 and 34.

The Examiner does not allege that the Ramarathnam reference contains any teaching of Applicant's claimed voltage sensor for producing "a signal indicative of said DC supply voltage." As a result, even if Dyer, Wilcox and Ramarathnam were combined as suggested by the Examiner, there would be no disclosure of claim 13, let alone claims 26, 33 and 34 dependent thereon. Accordingly, any further rejection of claims 26, 33 and 34 is respectfully traversed.

In section 6 of the Official Action, the Examiner rejects claim 29 as unpatentable over the Dyer/Wilcox combination further in view of Smedley (U.S. Patent 5,559,467). As noted above, the Dyer and Wilcox references do not disclose all features of Applicant's independent claim 13 from which claim 29 ultimately depends and therefore the combination fails to disclose the subject matter of claim 29.

The Examiner does not allege that the Smedley reference contains any teaching of Applicant's claimed voltage sensor for producing "a signal indicative of said DC supply voltage." As a result, even if Dyer, Wilcox and Smedley were combined as suggested by the Examiner, there would be no disclosure of claim 13, let alone claim 29 dependent thereon. Accordingly, any further rejection of claim 29 is respectfully traversed.

Claim 27 is objected to as dependent from a rejected base claim, but is indicated as containing allowable subject matter. Claim 27 has been amended to read in independent form, thereby placing it in condition for allowance.

Applicant has also amended the format of independent claim 1 in order that the Examiner may more clearly understand that the switching circuit includes the bridge circuit, the voltage sensor and the switching signal generator. The interrelationship of the switching signal generator which is responsive to the DC supply voltage signal and the voltage demand signal ties in the other structures recited in the claim. Because these features are simply not evidenced in the cited prior art references, it is clear that amended independent claim 1 and previously presented independent claim 13 are all clearly patentable over the cited prior art references and any further rejection thereunder is respectfully traversed.

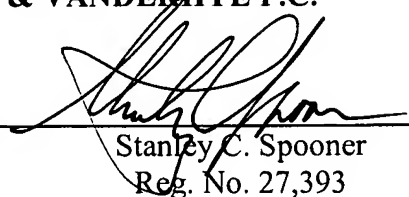
Having responded to all objections and rejections noted in the outstanding Official Action, it is submitted that claims 1, 6, 9-11 and 13-34 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, he is respectfully requested to contact Applicant's undersigned representative.

WESTCOTT  
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Respectfully submitted,

**NIXON & VANDERHYE P.C.**

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